

THE STATUS AND PROGRESS OF WATERFOWL MANAGEMENT
IN CANADA

At a time of buoyant economy, rising standard of living, shorter hours of work, and more leisure one of our major leisure-use resources is in trouble. Wildlife of many kinds suffers damage to its habitat through our actions. Waterfowl are completely dependent on wetlands for breeding habitat. They are particularly vulnerable to destruction of that habitat by drainage or filling for agriculture, industry, urban expansion, and transportation.

In recent speeches, the Honourable Arthur Laing, Minister of Northern Affairs and National Resources, has discussed the threats to our waterfowl resource. This year the Canadian Wildlife Service has published and distributed, in two languages, about a quarter of a million copies of a pamphlet called "Waterfowl, a resource in danger," and about as many copies of a cartoon booklet called "The Swamper". We have also produced a colour motion picture titled "Waterfowl, a resource in danger," and four television clips which will be distributed nationally. That distribution and Mr. Laing's addresses were attempts to inform Canadians about the status of waterfowl and the need for improved management of waterfowl habitat to safeguard the resource.

Before we can manage waterfowl habitat we have to know what it is, where it is, how much of it there was and is now, and how much we need.

We have known since before the Migratory Birds Treaty was signed 49 years ago that waterfowl nest right across the southern third of Canada, and some well north of that portion. Nesting is, of course, most concentrated where conditions are best.

Several species of geese nest in Northern Canada, on the mainland and on the lower tier of Arctic Islands. Their habitat has been little affected by man-made changes. The most important breeding grounds lie in thirteen Arctic Migratory Bird Sanctuaries which cover more than 40,000 square miles. We are not likely to carry on major management activities in natural goose nesting areas in the near future. However, we may decide to spread goose nesting to new areas by improving goose habitat in Southern Canada. We may also expand northern nesting populations by using some new Russian ideas to establish populations in areas not now used for nesting.

Three-quarters of the most sought-after species of ducks of North America nest on the sloughs and potholes of the Canadian prairies. The remainder nest in scattered locations across more than two million square miles of the pre-cambrian shield, a hard rock area of low biological productivity; on large river deltas; and on marsh areas associated with large inland lakes, river valleys, and sea coasts.

Drainage, mainly for agricultural development, is a threat to some major marsh and delta areas and to the millions

of prairie sloughs and potholes. The sloughs and potholes lie on the prairie grain-growing areas, that 60 million acre "breadbasket" of southern Saskatchewan and adjacent parts of Alberta and Manitoba. In July of 1955, a wet year, there were more than five million potholes; in a drought year, 1959, their July number fell to about one million.

We are presently in the course of a four-year pilot program for acquisition of prairie wetland. Our objective when the program began in 1963 was to try to develop a simple system of land acquisition and to build public understanding and co-operation.

More particularly, we wanted to know if prairie farmers would agree to maintain their wetlands for duck production for a 20-year period in return for cash payments in advance. We learned that the majority of those approached would do so. In 1963 and 1964 we signed agreements with and made payments to 41 title holders of 95 quarter sections of land containing about 1,800 acres of wetlands in the three provinces. The payments, for a 20-year agreement not to drain or fill the wetlands or to burn the vegetation from around them, averaged a little over \$14.00 per acre and about \$630.00 per landowner. The payments were based on the present sale price of neighbouring land, discounted over 20 years at five per cent per year. We found that acceptance of the agreements depended more on the size of the cash offer than on the price per acre. About seven-eighths of the offers of more than \$500.00 were accepted,

in contrast to about half for those of less than \$500.00. In 1965, we will try to simplify the administrative procedures and to reduce the cost in time, manpower, and money of negotiating the agreements and paying the land-owners.

The objectives of our pilot program, which will continue in 1966, have been partially fulfilled. Public support is increasing. Some landowners have offered to have their lands included in the program before we have asked for their co-operation and before our studies have reached their areas. We have not yet developed the quick, easy land acquisition procedures we need. Our major program involves the acquisition of four million acres of critical wetlands during the period 1967-1976. We expect the cost of agreements to be about five million dollars per year during those ten years.

Another major need is for large marshes. Because of the complexity of ownership we believe outright purchase will be more suitable than agreements to ensure marsh preservation. Our first small purchase will be made this year. After we have gained experience we expect to spend about two million dollars on marsh purchases over a five-year period. The areas purchased will include some breeding areas. However, much of the emphasis will be on areas for feeding and resting during migration, and in the coastal areas, for use by wintering ducks and geese.

Knowing the most important areas for waterfowl production, migration, and wintering, and acquiring those areas are

only the beginning. After that program is well begun we must start improving some areas to increase their usefulness to waterfowl. The know-how is available. The problem will be to get the trained manpower to apply the techniques. In 1964, we began a program of \$1,200 scholarships for graduate work in the wildlife field. Three were given that year, and five in 1965. The program is expected to grow further. We are expanding our contract work with universities to involve more student training. We have also increased our employment of graduate and undergraduate students in our summer research, conservation, and development programs.

So far I have not mentioned the one management method we have used on waterfowl for the past 49 years, namely, control of the harvest. Regulation of the harvest is one of the oldest game management techniques. It was described by Moses in the book of Deuteronomy - if you care to consult your Old Testament the reference is Chapter 22 verse 6. It is still a good technique and has helped to maintain waterfowl numbers against increasing pressure of hunting and habitat loss ever since the Migratory Birds Treaty was signed. To regulation of the harvest we must now add habitat management. In doing that we must not overlook the information we can secure from the harvest.

To do a good job of management we need to know how many waterfowl are killed each year and by how many hunters. We also need to know how hunters were distributed and when, where, and how they hunted. It may be even more important to know why they chose hunting instead of some other recreation

Our 1961 economic survey of hunting and fishing in Canada indicated that about 350,000 waterfowl hunters spent 27 million dollars that year. Under provincial licensing it is not possible to get comparable sampling universes in the different provinces and so we do not yet have good national figures on hunters or kill. To get good figures on kill we need a national kill survey based on a National Waterfowl Hunting Licence.

Years ago we proposed a National Waterfowl Hunting Licence similar to the United States Duck Stamp. We had no wish to use it as a means of raising funds for land acquisition but that misunderstanding has occurred. Acceptance for the idea of a kill survey based on a national licensing system is increasing. We hope to have our first national kill survey in 1966.

We have not stressed the revenue raising function of a National Waterfowl Hunting Licence, because the money that could be raised by that means would not be enough to do the job. In addition, we believe all Canadians, not just duck hunters, will want to participate in this important work. In some areas there are already more nature lovers using the resource than hunters. We believe the number of observers will increase. In some United States waterfowl hunting areas the financial contribution to the local economy is greater from non-hunters than from hunters. I believe there may be Canadian areas where that occurs.

Canadians are well aware of the co-operative background of North American Waterfowl Management. We raise most of the ducks; the United States provides a winter home for most of them. The question has been asked, what about the use of United States funds in the Canadian wetland acquisition program? Both parts of the waterfowl story need attention. I am sure that United States funds can be wisely used in that country for a long time yet before all the needed jobs are done. The major problem in Canada for some time to come is more likely to be a shortage of trained manpower than of money.

Our proposed National Waterfowl Kill Survey will provide us with some information on when, where, and by whom the hunting is done. It will also tell us about species and age and sex classes of birds involved. We hope, of course, to supplement that survey by expanded research on life histories, population dynamics, and general ecology of the many waterfowl species on which those data are incomplete.

We have just signed our first contract with a research agency to carry out an economic study of waterfowl hunters. It will certainly give us additional information about how people are spending large sums of money to secure a few pounds of meat - and a series of intangible and priceless aesthetic pleasures.

Really adequate waterfowl management will inevitably involve much more precise management by species. We must

learn how to teach hunters species differentiation, in the field, before they pull the trigger. The fact that large numbers of bird watchers and waterfowl biologists have developed field species-recognition ability shows that it can be done. We are developing a training method using films and other aids to increase the hunter's interest in identifying waterfowl in the field and our ability to help him learn how. We do not think there is an easy method. It will take perseverance and practice. The rewards for success will be large: more hunting of species that can stand the pressure, more assurance of safety for species in short supply, more enjoyable days in the field when the hunter knows what he is shooting and why.

Thus far I have not mentioned the farmers, not all of whom are enthusiastic about our efforts on behalf of waterfowl. Farming is now a business rather than a way of life. A good businessman has to watch his profits and his losses. In seasons when harvesting is delayed by autumn rains losses of agricultural production caused by waterfowl may involve hundreds of thousands of dollars.

Before we could expect wide co-operation in our proposed wetland acquisition and management program we had to safeguard the interests of the farmer. We had to learn the nature and magnitude of waterfowl damage to agricultural crops. To do that we gathered information through questionnaires and interviews over several years.

We developed equipment for scaring birds out of crop fields. Commercially available acetylene exploders were improved to our specifications by the National Research Council, so as to be more easily controllable and fully reliable. We experimented to determine the most effective patterns of use to protect swathed crops from duck and crane damage. The perfected unit, now produced commercially in Saskatoon, is used in Canada, the United States, and one of the East African countries. Its use in East Africa for elephant control shows its versatility. It is very effective on ducks in fields and on airports.

Finally, by leasing wetlands we provided a new source of income to the farmer in return for his co-operation in permitting a crop of waterfowl for public use to be produced on his private land.

We have not been alone in dealing with crop damage by waterfowl. Two of the prairie provinces have entered the field of wildlife crop damage insurance. A farmer who takes out insurance may be reimbursed if his crop is damaged by wildlife, including waterfowl. The largest part of the **premium** is paid by a levy on sportsmen as an addition to their hunting licence cost.

Leasing wetland with public funds as a way of paying the farmer for growing a public-use crop on his private land is a new idea. We believe our efforts to implement the idea over the next few years will be aided by public support and co-operation that extends well beyond the hunters.

The future for waterfowl and our management of them looks much more promising now than in the recent past. Our work together will ensure that we achieve the best possible status for waterfowl through progress in management.

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